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1. Claim 1 claims protection for a fuel cell. Cited Example 1 (JP Unexamined Patent Application Publication 2002-231290A, (0001), (0026), and (0027) of the Specification) discloses a fuel cell system, specifically disclosing a fuel cell system and portable electronic device using a fuel cell as a power source, having the following characteristics.

"Said fuel cell system comprises a fuel cell main body having a fuel electrode and an oxidant electrode, and supplies organic liquid fuel as the fuel to the fuel electrode"

The distinction between the fuel cells of Claim 1 and Cited Example 1 is that the fuel cell of Claim 1 additionally comprises a vibration generating unit that eliminates the carbon dioxide bubbles formed at the fuel electrode. Based on the aforementioned distinguishing technical characteristic, it can be established that the technical problem to be solved by Claim 1 vis-à-vis Cited Example 1 is to remove carbon dioxide formed at the fuel electrode during the period of operation of the fuel cell, thereby increasing the diffusion speed at which the organic liquid fuel reaches the fuel electrode and increasing the output voltage.

Cited Example 2 (JP Unexamined Patent Application Publication H8-287941A, (0010) and (0022) of the Specification and Figure 6) discloses a battery, disclosing specifically the following content.

"A vibration unit and a device for supplying drive current to the vibration unit are provided in the battery. Said vibration unit serves to remove bubbles from the electrode surface by vibration in the charging process, preventing bubbles from impeding the progress of reaction, maximizing the contact between the electrolyte and electrodes, improving the efficiency of the reaction and shortening the charging time."

Therefore, the aforementioned technical characteristics disclosed in Cited Example 2 disclose the distinguishing characteristics between the fuel cell of aforementioned Claim 1 and Cited Example 1, the effect produced in Cited Example 2 by the aforementioned technical characteristics disclosed in aforementioned Cited Example 2 being to remove bubbles from the electrode surface by vibration generated in the vibration unit during charging, thereby increasing the reaction diffusion speed. In other words, Cited Example 2 provides the teaching of applying the aforementioned technical characteristics to Cited Example 1 to resolve the technical problem thereof. Thus, obtaining the technical idea for which protection is claimed in Claim 1 on the basis of Cited Example 1 in combination with Cited Example 2 is a matter which could be easily accomplished by a person skilled in the art. Therefore, the technical idea for which protection is claimed in said claim has no outstanding substantive characteristic or remarkable progress and lacks inventive step as stipulated in Article 22, Paragraph 3 of the Patent Law.

2. The additional technical characteristics of Claims 2, 3, and 5 have been disclosed in Cited Example 2 (same source as above). Therefore, if the cited claim lacks inventive step, then said Claims 2, 3, and 5 also lack inventive step as stipulated in Article 22, Paragraph 3 of the Patent Law.

3. Claim 11 claims protection for a portable device. Cited Example 1 (JP Unexamined Patent Application Publication 2002-231290A) discloses a fuel cell system and a portable electronic device using a fuel cell as a power source, having the following characteristics.

"The aforementioned fuel cell system contains a fuel cell main body having a fuel electrode and an oxidant electrode and supplies organic liquid fuel as the fuel to the fuel electrode."

The distinction between the portable device of Claim 11 and Cited Example 1 is that the fuel cell in the portable device of Claim 11 comprises a vibration generating unit which removes carbon dioxide bubbles formed on the fuel electrode. Based on the aforementioned distinguishing technical characteristic, it can be established that the technical problem to be solved by Claim 11 vis-à-vis Cited Example 1 is to remove carbon dioxide formed at the fuel electrode during the period of operation of the fuel cell, thereby increasing the diffusion speed at which the organic liquid fuel reaches the fuel electrode and increasing the output voltage.

Cited Example 2 (JP Unexamined Patent Application Publication H8-287941A) discloses a battery, disclosing specifically the following content.

"A vibration unit and a device for supplying drive current to the vibration unit are provided in the battery. Said vibration unit serves to remove bubbles from the electrode surface by vibration in the charging process, preventing bubbles from impeding the progress of reaction, maximizing the contact between the electrolyte and electrodes, improving the effect of the reaction and shortening the charging time."

Therefore, the aforementioned technical characteristics disclosed in Cited Example 2 disclose the distinguishing characteristics between the fuel cell in the portable device of aforementioned Claim 11 and Cited Example 1, the effect produced in Cited Example 2 by the aforementioned technical characteristics disclosed in Cited Example 2

being to remove bubbles from the electrode surface by vibration generated in the vibration unit during charging, thereby increasing the reaction speed. In other words, Cited Example 2 provides the teaching of applying the aforementioned technical characteristics to Cited Example 1 to resolve the technical problem thereof. Thus, obtaining the technical idea for which protection is claimed in Claim 11 on the basis of Cited Example 1 in combination with Cited Example 2 is a matter which could be easily accomplished by a person skilled in the art. Therefore, the technical idea for which protection is claimed in said claim has no outstanding substantive characteristic or remarkable progress and lacks the inventive step stipulated in Article 22, Paragraph 3 of the Patent Law.

4. The additional technical characteristics of Claims 12, 13, and 15 have been disclosed in Cited Example 2 (same source as above). Therefore, if the cited claim lacks inventive step, then said Claims 12, 13, and 15 also lack the inventive step stipulated in Article 22, Paragraph 3 of the Patent Law.

5. The additional technical characteristics of Claim 23 are that the vibration generating unit doubles as an information notification unit. Cited Example 3 (JP Unexamined Patent Application Publication 2002-159917A), (0001) and (0002), discloses a vibration generating device, disclosing specifically that the vibration generating device is used as an information notification device during mobile telephone calls. Thus, Cited Example 3 discloses the aforementioned additional technical characteristics, and the effect produced by said additional technical characteristics in Cited Example 3 is the same as the effect produced thereby in the cited claim. Consequently, it provides the teaching of obtaining Claim 23 by combining the aforementioned additional technical characteristics with the cited claim. Therefore, Claim 23 does not have any outstanding substantive characteristics or remarkable progress and does not satisfy the inventive step provisions of Article 22, Paragraph 3 of the Patent Law.

6. Claim 25 claims protection for a portable telephone. Cited Example 1 (JP 2002-231290A) discloses a fuel cell system and a portable electronic device using a fuel cell as a power source, having the following characteristics.

"The aforementioned fuel cell system contains a fuel cell main body having a fuel electrode and an oxidant electrode and supplies organic liquid fuel as the fuel to the fuel electrode"

The distinction between the portable device of Claim 25 and Cited Example 1 is that the fuel cell in the portable device of Claim 25 additionally comprises a vibration generating unit which removes carbon dioxide bubbles formed on the fuel electrode, and said vibration generating unit doubles as an information notification unit. Based on the aforementioned distinguishing technical characteristics, it can be established that the technical problem to be solved by Claim 25 vis-à-vis Cited Example 1 is to remove carbon dioxide formed at the fuel electrode during the period of operation of the fuel cell, thereby increasing the diffusion speed at which the organic liquid fuel reaches the fuel electrode and increasing the output voltage; and at the same time, using the vibration generating unit as an information notification unit allows the device case to be made more compact.

Cited Example 2 (JP Unexamined Patent Application Publication H8-287941A) discloses a battery, disclosing specifically the following content.

"A vibration unit and a device for supplying drive current to the vibration unit are provided in the battery. Said vibration unit serves to remove bubbles from the electrode surface by vibration in the charging process, preventing bubbles from impeding the progress of reaction, maximizing the contact between the electrolyte and electrodes, improving reaction efficiency and shortening the charging time."

Cited Example 3 (JP Unexamined Patent Application Publication 2002-159917A) discloses a vibration generating device, disclosing specifically that the vibration generating device is used as an information notification device during mobile telephone calls.

Therefore, the aforementioned technical characteristics disclosed in Cited Example 2 and 3 disclose the distinguishing characteristics between the fuel cell in the portable device of aforementioned Claim 25 and Cited Example 1, the effect produced in the cited examples by the aforementioned technical characteristics are the same as the effect produced thereby in Claim 25, and Cited Example 2 and 3 provide the teaching for applying the aforementioned technical characteristics to Cited Example 1 to resolve the technical problems thereof. Thus, obtaining the technical idea for which protection is claimed in Claim 25 on the basis of Cited Example 1 in combination with Cited Example 2 and 3 is a matter which could be easily accomplished by a person skilled in the art. Therefore, the technical idea for which protection is claimed in said claim has no outstanding substantive characteristics or remarkable progress and lacks the inventive step stipulated in Article 22, Paragraph 3 of the Patent Law.

7. Claim 26 claims protection for a method of operating a fuel cell. Cited Example 1 (JP Unexamined Patent Application Publication 2002-231290A) discloses a fuel cell system, specifically disclosing a fuel cell system and a portable electronic device using a fuel cell as a power source, having the following characteristics.

"The aforementioned fuel cell system contains a fuel cell main body having a fuel electrode and an oxidant electrode and supplies organic liquid fuel as the fuel to the fuel electrode"

Namely, Cited Example 1 discloses a power generation step in which organic liquid fuel is supplied to the fuel electrode of the fuel cell and oxidant is supplied to the oxidant electrode.

The distinction between the method of operating fuel cell of Claim 26 and Cited Example 1 is that the method of operating a fuel cell of Claim 26 additionally comprises the step of removing carbon dioxide formed on said fuel electrode by imparting vibration to said fuel electrode. Based on the aforementioned distinguishing technical characteristics, it can be established that the technical problem to be solved by Claim 26 vis-à-vis Cited Example 1 is to remove carbon dioxide formed at the fuel electrode during the period of operation of the fuel cell, thereby increasing the diffusion speed at which the organic liquid fuel reaches the fuel electrode and increasing the output voltage.

Cited Example 2 (JP Unexamined Patent Application Publication H8-287941A) discloses a battery, disclosing specifically the following content.

"A vibration unit and a device for supplying drive current to the vibration unit are provided in the battery. Said vibration unit serves to remove bubbles from the electrode surface by vibration in the charging process, preventing bubbles from impeding the progress of reaction, maximizing the contact between the electrolyte and electrodes, improving reaction efficiency and shortening the charging time"

Therefore, the aforementioned technical characteristics disclosed in Cited Example 2 disclose the distinguishing characteristics between the method of operating a fuel cell of aforementioned Claim 26 and Cited Example 1, the effect produced in Cited Example 2 by the aforementioned technical characteristics disclosed in Cited Example 2 being to remove bubbles from the electrode surface by vibration generated in the vibration unit during charging, thereby increasing the reaction speed. In other words, Cited Example 2 provides the teaching of applying the aforementioned technical characteristics to Cited Example 1 to resolve the technical problem thereof. Thus, obtaining the technical idea for which protection is claimed in Claim 26 on the basis of Cited Example 1 in combination with Cited Example 2 is a matter which could be easily accomplished by a person skilled in the art. Therefore, the technical idea for which protection is claimed in said claim has no outstanding substantive characteristic or remarkable progress and lacks the inventive step stipulated in Article 22, Paragraph 3 of the Patent Law.

8. The additional technical characteristics of Claims 27 and 29 have been disclosed in Cited Example 2 (same source as above). Therefore, if the cited claim lacks inventive step, then Claims 27 and 29 also lack the inventive step stipulated in Article 22, Paragraph 3 of the Patent Law.

9. The additional technical characteristics of Claims 4, 14, and 28 are that "said vibration generating unit is driven by a portion of the output of said fuel cell main body, and a portion of the current output by the fuel cell itself is used as the motive force for the driving vibration generating unit." These however are matters which could be easily conceived of by a person skilled in the art. Therefore, Claims 4, 14, and 28 lack the inventive step stipulated in Article 22, Paragraph 3 of the Patent Law.

10. The additional technical characteristics of Claims 6, 7, 16, and 17 are that "the vibration generating unit is arranged on the fuel cell main body; and a support member on which the fuel cell main body and vibration generating unit are arranged." For a person skilled in the art, arranging a vibration unit on a fuel cell main body serves to miniaturize the overall system; and providing a support member is a relatively simple method of arranging a vibration generating unit on a fuel cell main body. Based on this, it can be seen that the aforementioned additional technical characteristics could be easily conceived of by a person skilled in the art. Therefore, Claims 6, 7, 16, and 17 lack the inventive step stipulated in Article 22, Paragraph 3 of the Patent Law.

11. The additional technical characteristics of Claims 8 and 18 are that "the collector is coated with a hydrophilic coating material." Cited Example 4 (CN1194474A, page 2, line 14 through page 3, line 24 of the Specification) discloses a solid polymer fuel cell, disclosing specifically, as indicated below, that the fuel cell uses an electrode layer comprising a porous core part and a highly water permeable permeation part (corresponding to the collector of Claims 8 and 18).

"The aforementioned core part and permeation part are formed after performing non-uniform waterproofing on the hydrophilic porous material"

Although Cited Example 4 does not disclose that the collector is coated with a hydrophilic coating material, Cited Example 4 provides the teaching that the electrode layer is hydrophilic. The fact that a hydrophilic electrode layer can be obtained by coating with a hydrophilic material is a matter which could be easily conceived of by a person skilled in the art. Based on this, it can be seen that obtaining the technical idea from which protection is claimed in Claims 8 and 18 is a matter which could be easily accomplished by a person skilled in the art. Therefore, the technical idea for which protection is claimed in said claims has no outstanding substantive characteristics or remarkable progress and lacks the inventive step stipulated in Article 22, Paragraph 3 of the Patent Law.

12. The additional technical characteristics of Claims 9 and 19 are that "the collector is coated with a hydrophobic coating material." Cited Example 5 (CN1201270A, page 3, first paragraph from the bottom to page 4, third paragraph of the Specification) discloses a gas diffusion electrode for a polymer film fuel cell, disclosing specifically the following content.

"The electrode contains a thin, porous, flat conductive substrate, one side of which is coated with a pre-coat layer formed by mixing a low surface area conductive carbon and a first hydrophobic material, the pre-coat layer being coated with a catalyst layer formed by mixing a second hydrophilic material and platina, which is placed over the carbon."

According to this, Cited Example 5 discloses the aforementioned additional technical characteristics, and provides the teaching of combining the aforementioned additional technical characteristics with the cited claim to obtain the technical idea for which protection is claimed in Claims 9 and 19. In other words, obtaining Claims 9 and 10 would be easy for a person skilled in the art. Therefore, the technical idea for which protection is claimed in said claims has no outstanding substantive characteristics or remarkable progress and lacks the inventive step stipulated in Article 22, Paragraph 3 of the Patent Law.

For the above reasons, patent rights cannot be granted to this application with the current documents. The applicant should submit a new Request for Rights and/or Specification within the stipulated period in consideration of above examination opinion. When making amendments, the stipulations of Article 33 of the Patent Law must be satisfied and the scope present in the original Specification and Request for Rights must not be exceeded. If the applicant does not remedy the foregoing defects or does not demonstrate adequate grounds that the above stipulations have been satisfied within the response period stipulated in the present notification, a final decision of rejection will be rendered on the present application.